

XIX.—NOTES ON THE BREEDING HABITS OF SOME
SNAKES.

(With a plate).

Five snakes in the Reptiliary of the Zoological Gardens, Trivandrum, laid eggs within the last half year. Reference has already been made on p. 108, vol. xliii of this *Journal*, about one of these, the chequered water snake (*Nerodia piscator*) which as reported has laid the record number of eggs (91) observed for the species. The others that had their breeding season during this period were two pythons, one wolf snake and one krait. Attempts have been made to incubate the eggs of all these snakes, but hatchlings were obtained only in the case of *Nerodia*. Of the latter it might be mentioned that Major Wall says in his 'Popular Treatise on the Common Indian Snakes' that all attempts to incubate them have proved futile (*J.B.N.H.S.*, vol. xvii, p. 864). In case it might be of interest to the readers, I am giving below, details of observations made regarding the breeding season, number and size of eggs of each clutch, period of gestation and period of incubation as far as has been ascertainable.

The Python (*Python molurus*).—Two individuals of this species laid eggs, one on Feb. 19, and the other on March 19, 1942. In both cases the snakes soon after the commencement of the process of discharging the eggs coiled themselves round them. The number of eggs in the clutch of the former was 21, and of the latter 22. An egg measured $3\frac{1}{4}$ in. by $2\frac{1}{2}$ in. They were white in colour when laid, but later on turned brownish white. Though on previous occasions eggs have hatched out here, this time both the snakes moved away after nesting over the brood for a few days. While one of these was 'brooding' a fowl was let into the cage for feeding another python which was lying about 3 yards away in the same cage. The 'brooding' one at once darted forwards and caught hold of the fowl and commenced swallowing. After the feed it turned away from the eggs and subsequent attempts to coax it back to its clutch failed. The pythons while remaining coiled over the eggs were found to make jerky movements at regular intervals of between thirty seconds to one minute.

The Chequered Water Snake (*Nerodia piscator*).—This snake was admitted to the Reptiliary on the 24th November 1941, and has been in captivity since then without a mate. It laid eggs on the 29th January 1942. The period of gestation therefore cannot be less than 67 days which have intervened between its capture and the discharge of eggs. Major Wall mentions 55 days as the period of gestation for this species as observed by him. It took more than 12 hours for the reptile to void all the eggs (91) after which it remained inactive for a long time, its tail resting on the brood. The eggs were removed the next day, counted and placed in a glass jar over loose earth, covering the eggs with wet earth. The jar was so placed that for a couple of hours during the day direct rays of the sun might get access to it through the window of the Reptiliary. The earth was kept moist by occasionally sprinkling

water on it. In the meanwhile the mother had taken to its regular feed, shed its skin and to all appearances was quite unconcerned about the eggs. A few eggs hatched out on the 10th of March. The young ones were very inactive at first, but when put into water became very active and were swimming about. About 16 young ones were hatched out by the 12th March. The other eggs had begun to decay and were therefore removed. Many of these had fully developed embryos inside. Attempts to rear up these young ones failed and all of them died one after another during the succeeding few days. A hatchling as it emerged from the egg measured 7.2 ins. The period of incubation for the eggs of this species may be taken as 41 days.

The Wolf Snake (*Lycodon aulicus*).—A snake of this species was caught in a well on the 2nd June and brought to the zoo. It laid four eggs on the 3rd. After laying, it crept up to a corner of the cage and remained inactive for the two succeeding days. Even though it came down later it was not observed to feed on the small frogs which had been let into the cage. The snake was found dead on the 10th morning. It measured 19½ ins.

The Common Krait (*Bungarus caeruleus*).—A female measuring 3 ft. 4 ins. has been in captivity here since December 15, 1941. It laid 8 eggs on the 15th February 1942, 63 days having elapsed since its capture. Its mating must therefore have taken place in November or early in December. Major Wall has mentioned that its exact mating season has not been ascertained but he puts it down as probably during the months of February and March (vol. xviii, p. 722). Prior to laying, the krait built a sort of hollow nest in the sand on the floor of the cage and the eggs were voided into this depression. The eggs were white, glossy and elliptical, an egg measuring 1.3 ins. in length and 0.6 in. in breadth. The mother after laying, coiled itself round the eggs, even though the 'nesting' was not as compact as in the case of the Python. After a week it moved away and the eggs on examination were found to have shrunk considerably. Within the next two days they began to decay. This might probably be due to unfavourable weather conditions. According to Major Wall, the female after discharging her eggs remains coiled up with them at any rate until they are well advanced towards incubation. In this case none of the eggs which were examined after the mother had moved away, had developing embryos inside.

TRIVANDRUM,

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XX.—RIVER POLLUTION AND FISH MORTALITY.

During the recent heavy rain in the Rawalpindi District many of the rivers have come down in flood and it has been a most distressing sight to see the quantities of fish that have been killed by the polluted water from the Leh River.

The Leh River as you may know is a small river draining the Pindi district and having no source in the hills. It joins the Sohan River a hundred yards below where the Trunk Road crosses both